

## CLAIMS.

We claim:

1. (Withdrawn) A composition to render a gypsum product water resistant, the  
5 composition comprising a wax characterized by having a melting point ranging from  
approximately 120 degrees F to approximately 185 degrees F (Mettler Drop Point), and  
an iodine value between 0 and approximately 30, the wax selected from the group  
consisting of soybean, corn, cottonseed, rape, canola, sunflower, palm, palm kernel,  
coconut, crambe, linseed and peanut, the composition being added to the gypsum in a  
10 quantity sufficient to render the gypsum product water resistant.
2. (Withdrawn) The composition as described in claim 1, wherein the wax consists  
essentially of greater than approximately 90% triglycerides (by weight), and wherein the  
triglycerides comprise a fatty acid, the fatty acid having between approximately 8 to 22  
15 carbon atoms.
3. (Withdrawn) The composition as described in claim 2, wherein the triglycerides  
comprise from approximately 50 % by weight to approximately 98 % by weight stearic  
acid.  
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4. (Withdrawn) The composition as described in claim 2, wherein the wax has an  
iodine value ranging from approximately 1 to approximately 10.
5. (Withdrawn) The composition as described in claim 4, wherein the wax has an  
25 iodine value ranging from approximately 2 to approximately 5.
6. (Withdrawn) The composition as described in claim 4, wherein the melting point  
ranges between approximately 145 degrees F to approximately 165 degrees F.
- 30 7. (Withdrawn) The composition as described in claim 6, wherein the wax is soy wax.
8. (Withdrawn) The composition as described in claim 2, wherein the wax is palm wax.

9. (Currently Amended) A method to render a gypsum product water resistant, the method comprising the steps of:

forming an admixture comprising gypsum and water;

5 adding a wax to the gypsum admixture, the wax selected from the group consisting of soybean, corn, cottonseed, rape, canola, sunflower, palm, palm kernel, coconut, crambe, linseed and peanut; the wax characterized by having a melting point ranging from approximately 120 degrees F to approximately 185 degrees F (Mettler Drop Point), and an iodine value between 0 and approximately 30, wherein the wax is added to the gypsum admixture in the form of an emulsion, and wherein the gypsum  
10 product comprises from approximately 1 weight % wax emulsion to approximately 20 weight % wax emulsion;

depositing the admixture between a pair of paper liners, forming sheets of a gypsum product;

heating to a temperature between greater than 200 degrees F to approximately  
15 300 degrees F; and

allowing the deposited admixture to dry.

10. (Cancelled)

11. (Cancelled)

20 12. (Cancelled)

13. (Cancelled)

14. (Currently Amended) The method as described in claim 9 [10], wherein the wax is chosen from the group consisting of palm wax and soy wax.

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15. (Original) The method as described in claim 14, wherein the wax is soy wax.

16. (Cancelled)

17. (Cancelled)

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18. (Currently Amended) The method as described in claim 14 [17], wherein the gypsum product comprises from approximately 2 weight % wax emulsion to approximately 15 weight % wax emulsion.

19. (Previously Presented) The method as described in claim 18, wherein the gypsum product comprises approximately 8 weight % wax emulsion to approximately 13 weight % wax emulsion.
- 5 20. (Currently Amended) The method as described in claim 18 [10], wherein the gypsum admixture is formed and set into a water resistant gypsum wallboard.
21. (Cancelled)
- 10 22. (Withdrawn) A water resistant gypsum wallboard having a core comprising the set composition of claim 11.
23. (Withdrawn) A water resistant gypsum wallboard having a core comprising the set composition of claim 17.
- 15 24. (Cancelled)
25. (Withdrawn) A method for preparing a set, water resistant gypsum product comprising the steps of:
- 20       providing an aqueous mixture of gypsum;  
          adding at least about 1 % by weight of a vegetable wax to the mixture; and  
          forming and setting the mixture into the gypsum product, wherein the total amount of the vegetable wax present is sufficient to render the set gypsum product water resistant.
- 25 26. (Withdrawn) The method as described in claim 25, wherein the wax is selected from the group consisting of soybean, corn, cottonseed, rape, canola, sunflower, palm, palm kernel, coconut, crambe, linseed and peanut; and the wax is characterized by having a melting point ranging from approximately 120 degrees F to approximately 185
- 30 degrees F (Mettler Drop Point), and an iodine value between 0 and approximately 30.
27. (Withdrawn) The method as described in claim 26, wherein the wax is chosen from the group consisting of palm wax and soy wax.

28. (Withdrawn) The method as described in claim 27, wherein the wax is soy wax.
29. (Withdrawn) A composition to render a gypsum product water resistant, the composition comprising a wax characterized by having a melting point ranging from  
5 approximately 145 degrees F to approximately 165 degrees F (Mettler Drop Point), and an iodine value between 0 and approximately 5, the wax being a soybean wax, the composition being added to the gypsum in a quantity sufficient to render the gypsum product water resistant.
- 10 30. (Withdrawn) The composition as described in claim 29, wherein the wax consists essentially of greater than approximately 90% triglycerides (by weight), and wherein the triglycerides comprise a fatty acid, the fatty acid having between approximately 8 to 22 carbon atoms.
- 15 31. (Withdrawn) The composition as described in claim 30, wherein the triglycerides comprise approximately 50 % by weight to approximately 98 % by weight stearic acid.
32. (Withdrawn) The composition as described in claim 30, further comprising one or more materials chosen from the group consisting of petroleum-derived waxes, paraffins,  
20 Fischer-Tropsch waxes, microcrystalline waxes, mineral-derived waxes, asphalt, polyvinyl alcohol, and hydrophobic agents.